

# SAW Diplexer 1176.45/1585.47 MHz BW 20.46/52.84 SMD 1.5x1.1 mm

MODEL NO.:TE0149A

REV. NO.:1.0

## A. MAXIMUM RATING:

1. Input Power Level: 15 dBm
2. DC Voltage : 0 V
3. Operating Temperature: -30 °C to +85 °C
4. Storage Temperature: -40 °C to +85 °C
5. Moisture Sensitive Level: MSL 3



Electrostatic Sensitive Device (ESD)

## B. ELECTRICAL CHARACTERISTICS:

Terminating source impedance (single) :  $Z_s = 50 \Omega$

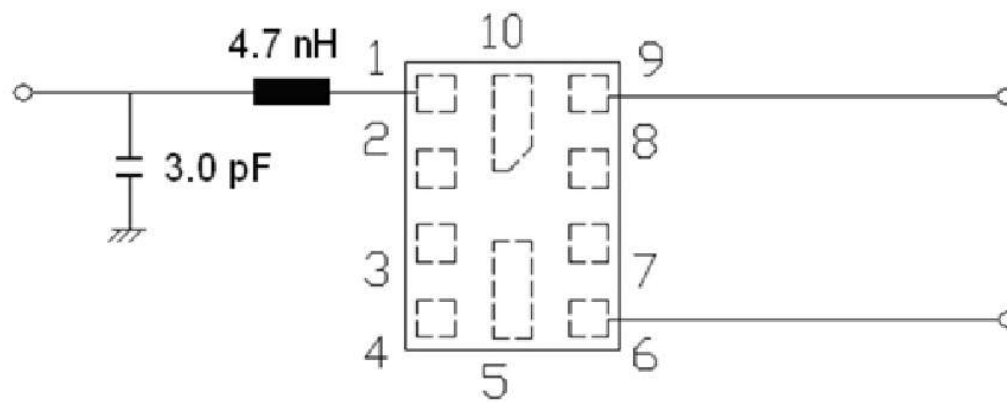
Terminating load impedance (single) :  $Z_L = 50 \Omega$

Item (L5 Band to Antenna)	Unit	Min.	Typ.	Max.
<b>Center frequency</b>	MHz	-	1176.45	-
<b>Insertion Loss (1166.22 ~ 1186.68 MHz)</b>	dB	-	2.0	2.4
<b>Group Delay Ripple (1166.22 ~ 1186.68 MHz)</b>	ns	-	8	15
<b>VSWR (1166.22 ~ 1186.68 MHz)</b>	-		2.4	2.8
<b>Attenuation (reference level from 0 dB)</b>				
850 ~ 980 MHz	dB	30	40	-
980 ~ 1010 MHz	dB	30	40	-
1010 ~ 1100 MHz	dB	30	36	-
1100 ~ 1130 MHz	dB	30	35	-
1220 ~ 1250 MHz	dB	20	27	-
1260 ~ 1427 MHz	dB	30	33	-
<b>Temperature Coefficient of Frequency</b>	ppm/K	-	-36	-

Item (L1 Band + GLONASS to Antenna)	Unit	Min.	Typ.	Max.
<b>Center frequency</b>	MHz	-	1585.47	-
<b>Insertion Loss</b> (1559.05 ~ 1611.89 MHz)	dB	-	2.5	3
<b>Group Delay Ripple</b> (1559.05 ~ 1611.89 MHz)	ns	-	13	20
<b>VSWR</b> (1559.05 ~ 1611.89 MHz)	-		2.3	2.8
<b>Attenuation</b> (reference level from 0 dB)				
10 ~ 960 MHz	dB	35	45	-
960 ~ 1463 MHz	dB	35	42	-
1710 ~ 1785 MHz	dB	30	36	-
1785 ~ 1990 MHz	dB	35	39	-
1990 ~ 2280 MHz	dB	35	44	-
2280 ~ 3000 MHz	dB	30	50	
3000 ~ 6000 MHz	dB	30	50	
<b>Temperature Coefficient of Frequency</b>	ppm/K	-	-36	-

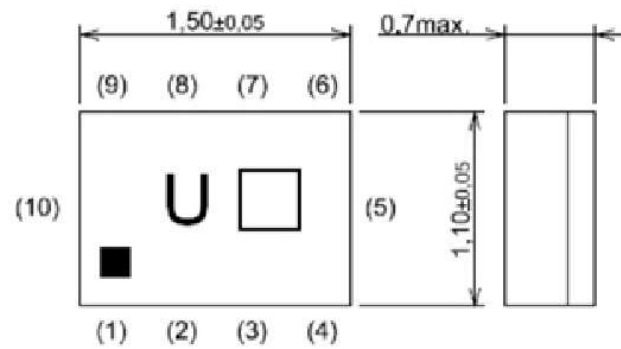
Item (Isolation)	Unit	Min.	Typ.	Max.
<b>Attenuation</b> (reference level from 0 dB)				
1166.22 ~ 1186.68 MHz	dB	35	48	-
1559.05 ~ 1605.89 MHz	dB	35	40	-

**C. TEST CIRCUIT:**

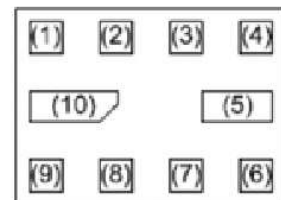


Pin #	Function
(1)	Antenna
(2)	Ground
(3)	Ground
(4)	Ground
(5)	Ground
(6)	L1 Band
(7)	Ground
(8)	Ground
(9)	L5 Band
(10)	Ground

**D. OUTLINE DRAWING:**



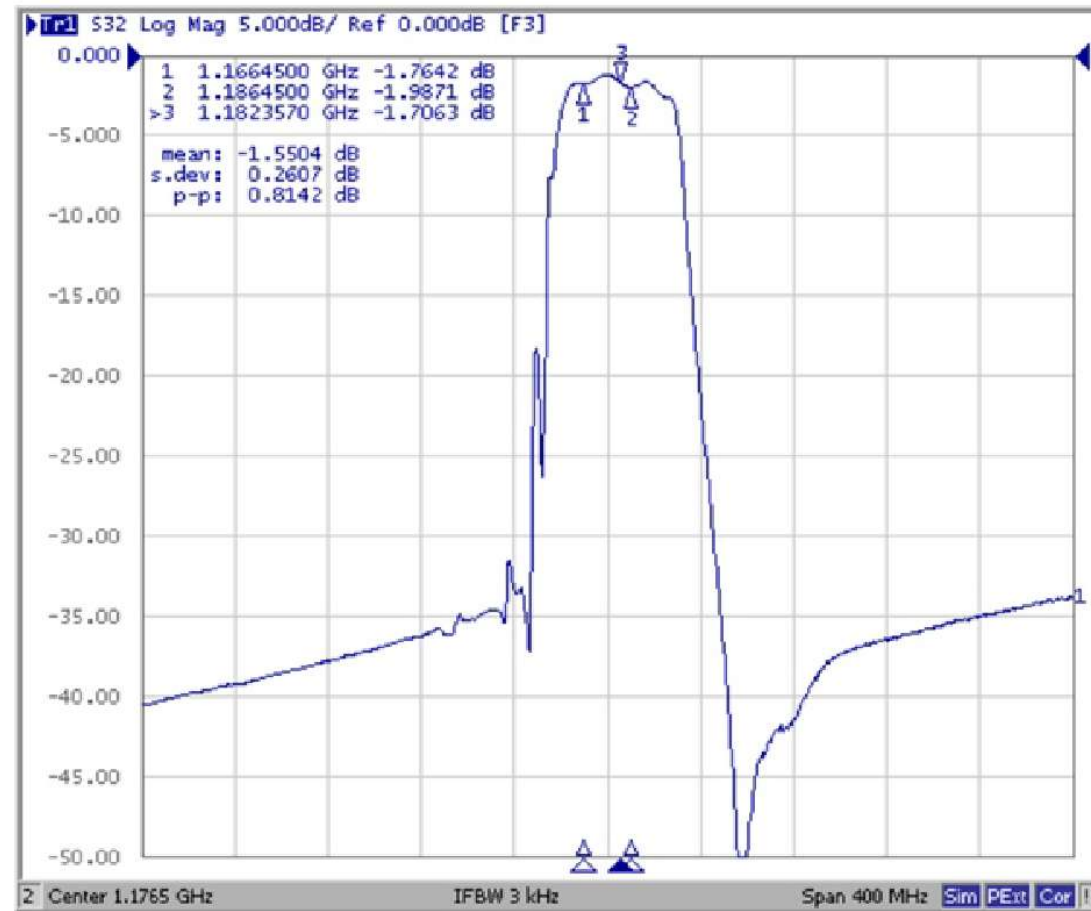
Pin #	Function
(1)	Antenna
(2)	Ground
(3)	Ground
(4)	Ground
(5)	Ground
(6)	L1 Band
(7)	Ground
(8)	Ground
(9)	L5 Band
(10)	Ground



Year/Month	1	2	3	4	5	6	7	8	9	10	11	12
2017	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>J</u>	<u>K</u>	<u>L</u>	<u>M</u>
2018	<u>N</u>	<u>P</u>	<u>Q</u>	<u>R</u>	<u>S</u>	<u>T</u>	<u>U</u>	<u>V</u>	<u>W</u>	<u>X</u>	<u>Y</u>	<u>Z</u>
2019	<u>a</u>	<u>b</u>	<u>c</u>	<u>d</u>	<u>e</u>	<u>f</u>	<u>g</u>	<u>h</u>	<u>j</u>	<u>k</u>	<u>l</u>	<u>m</u>
2020	<u>n</u>	<u>p</u>	<u>q</u>	<u>r</u>	<u>s</u>	<u>t</u>	<u>u</u>	<u>v</u>	<u>w</u>	<u>x</u>	<u>y</u>	<u>z</u>
2021	A	B	C	D	E	F	G	H	J	K	L	M
2022	N	P	Q	R	S	T	U	V	W	X	Y	Z
2023	a	b	c	d	e	f	g	h	j	k	l	m
2024	n	p	q	r	s	t	u	v	w	x	y	z

## E. Frequency Characteristics:

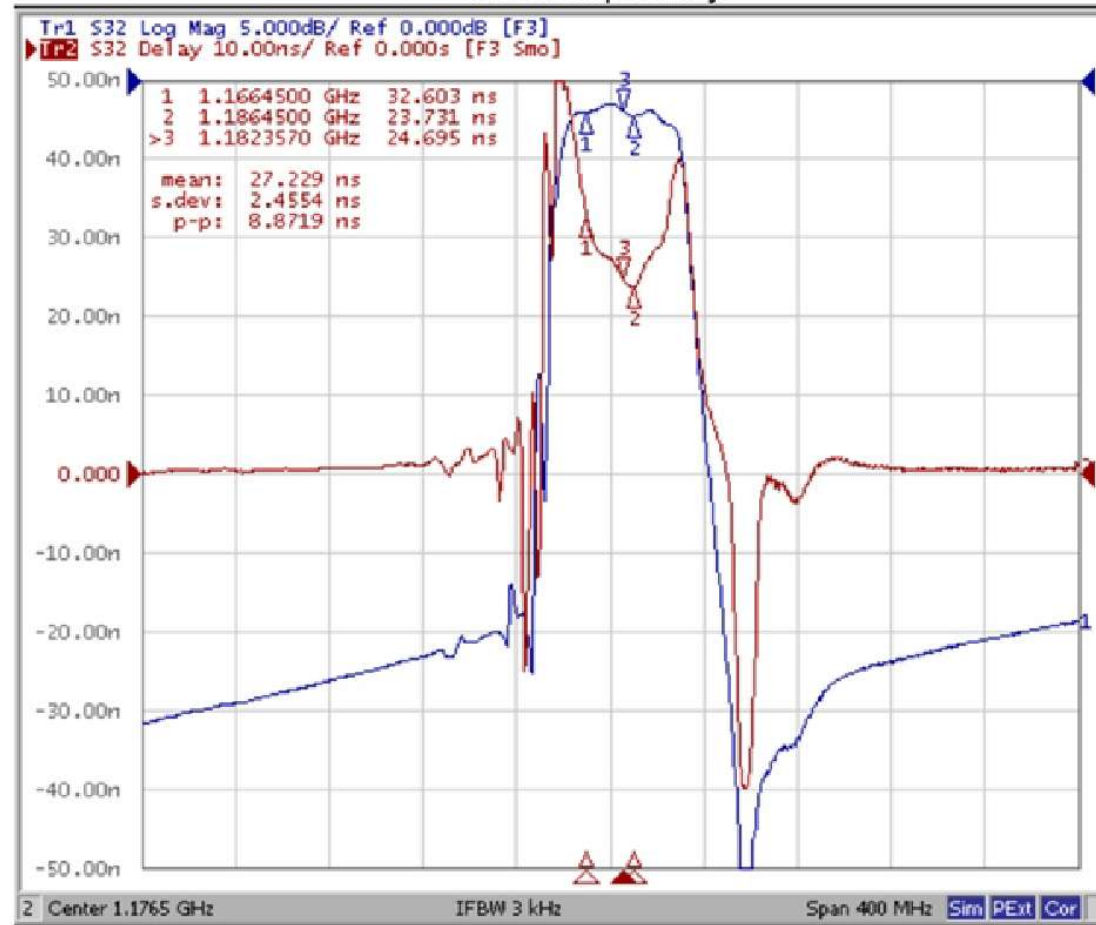
### L5 Pass Band



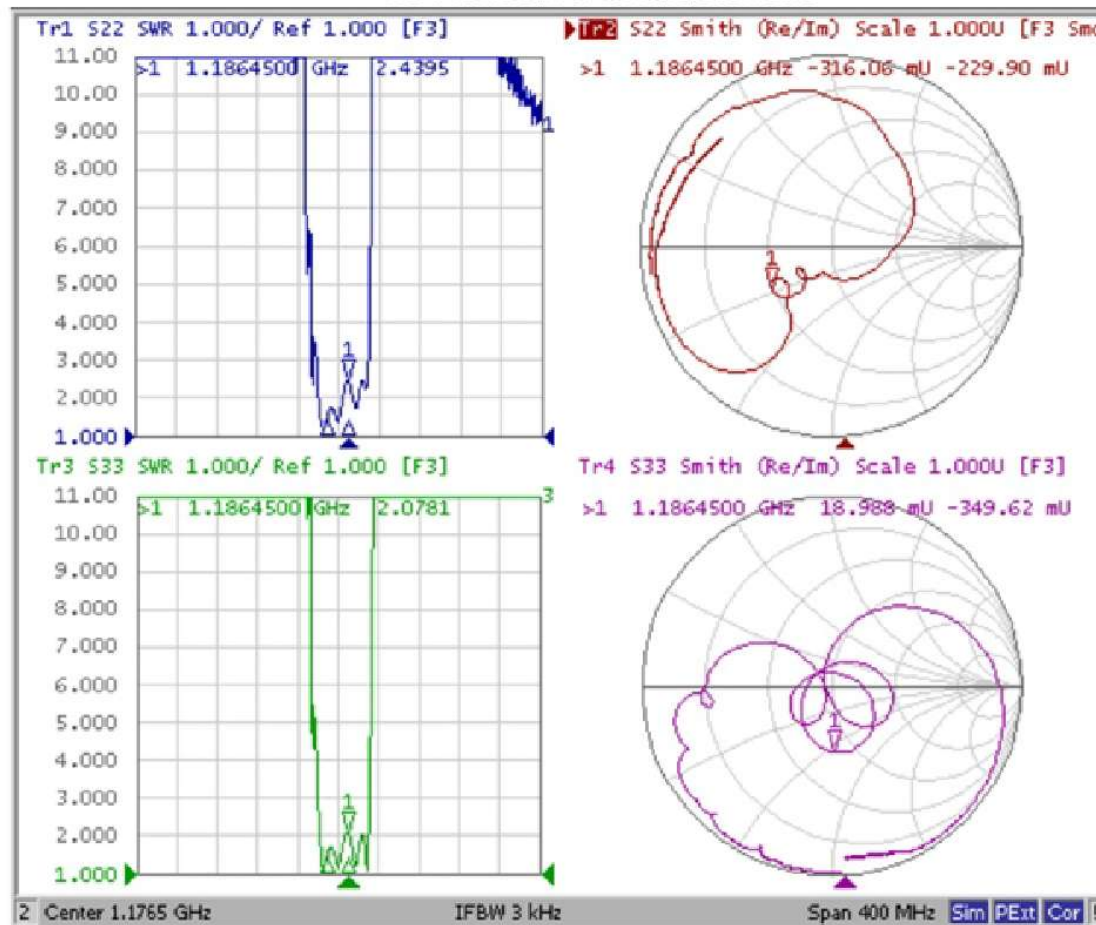
### L5 Full Range



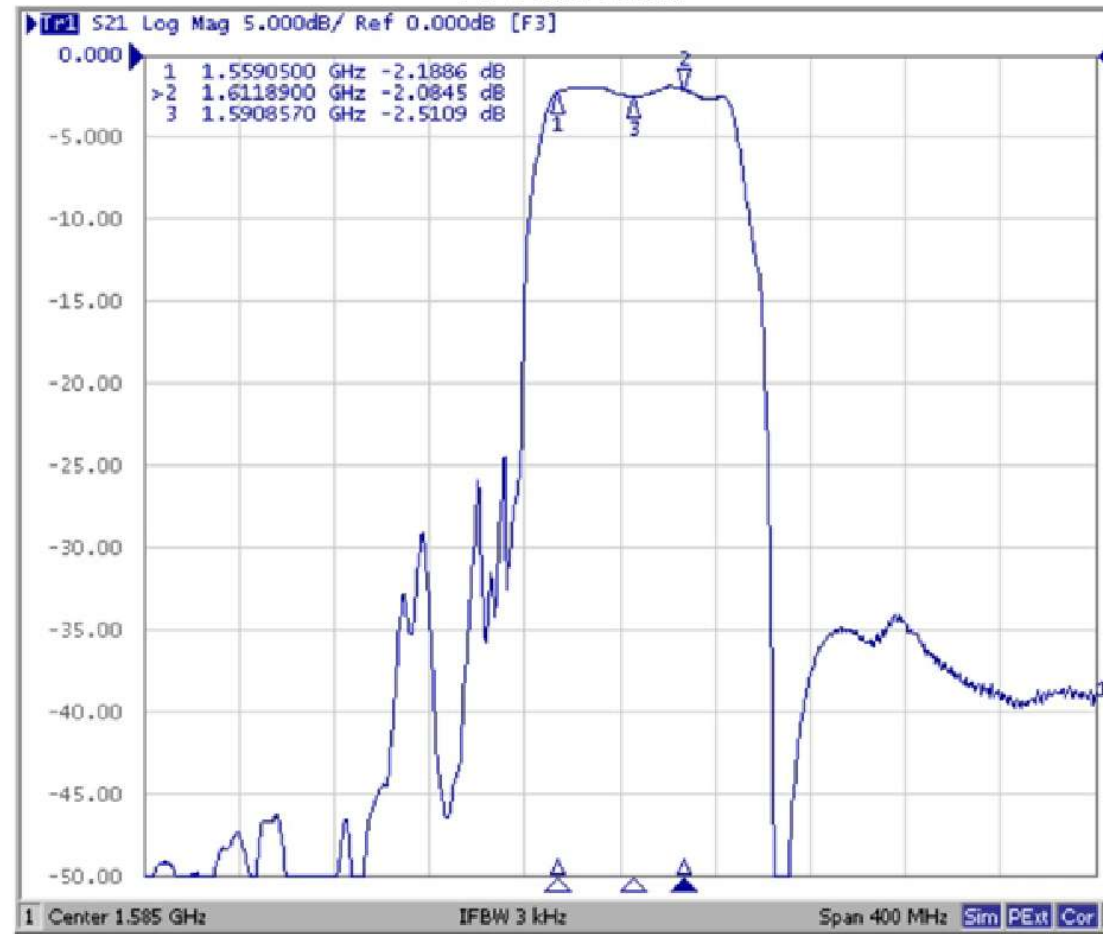
### L5 Group Delay



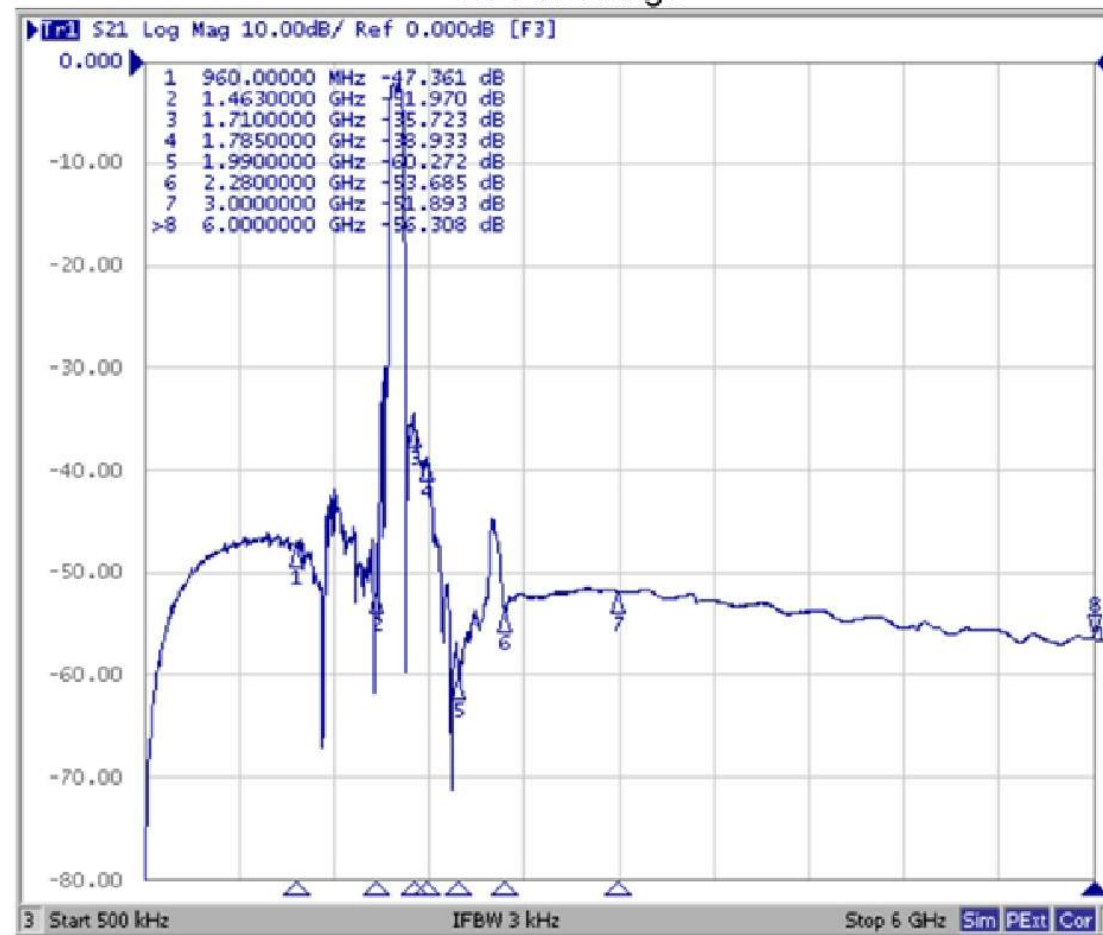
### L5 Reflective Characteristic



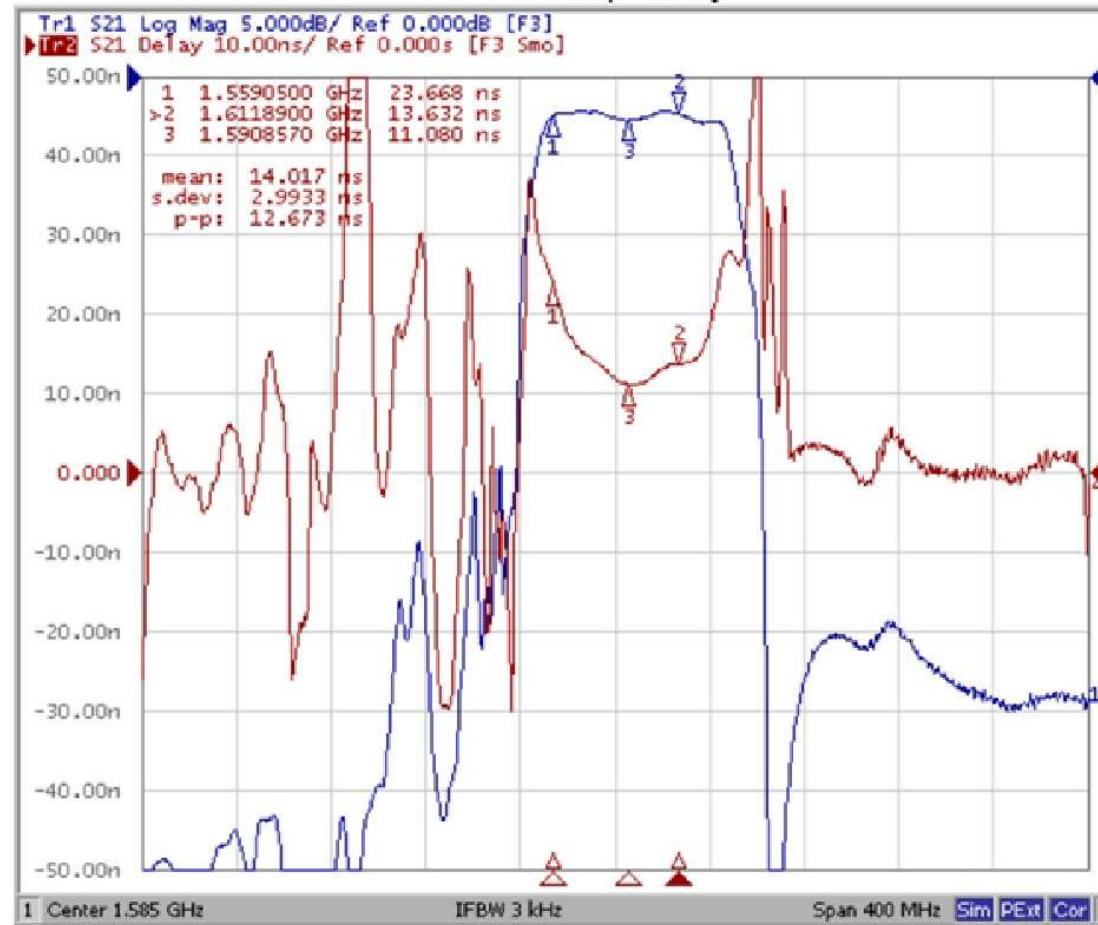
### L1 Pass Band



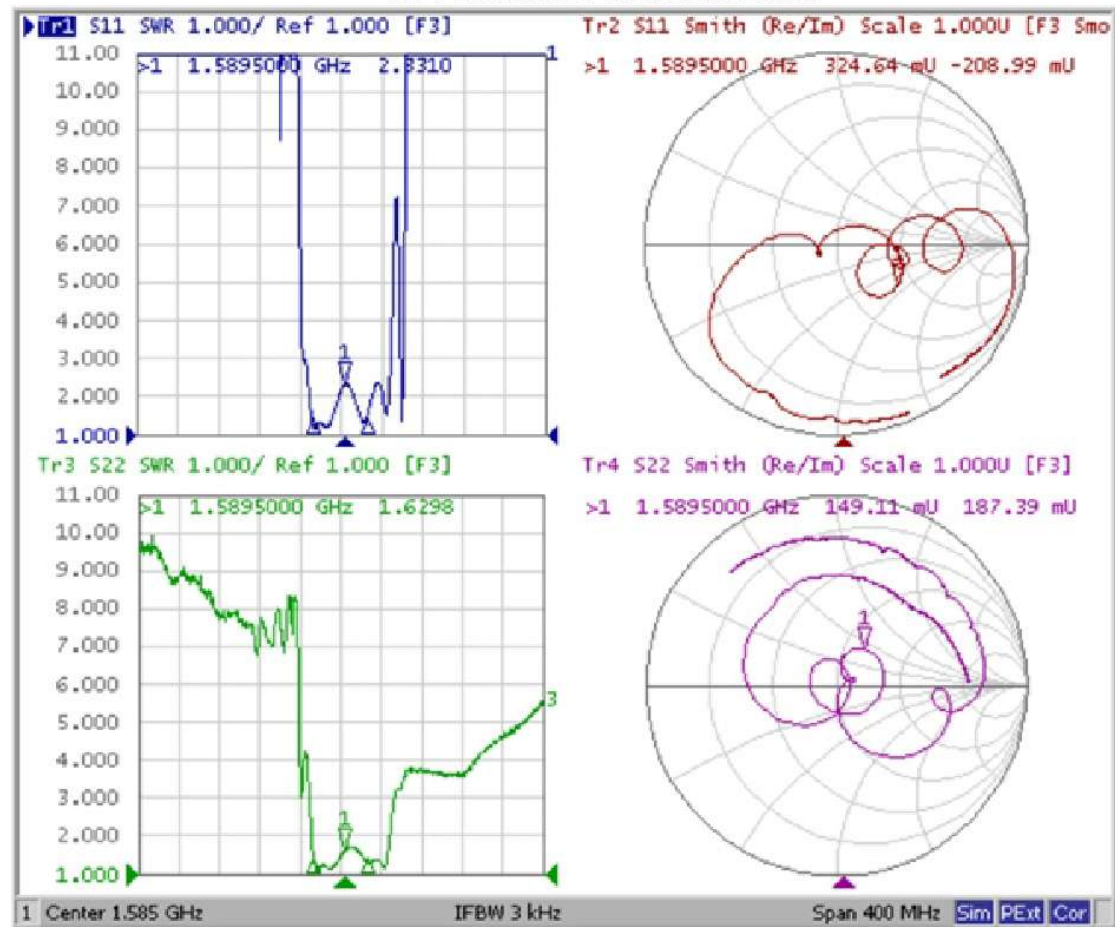
### L1 Full Range



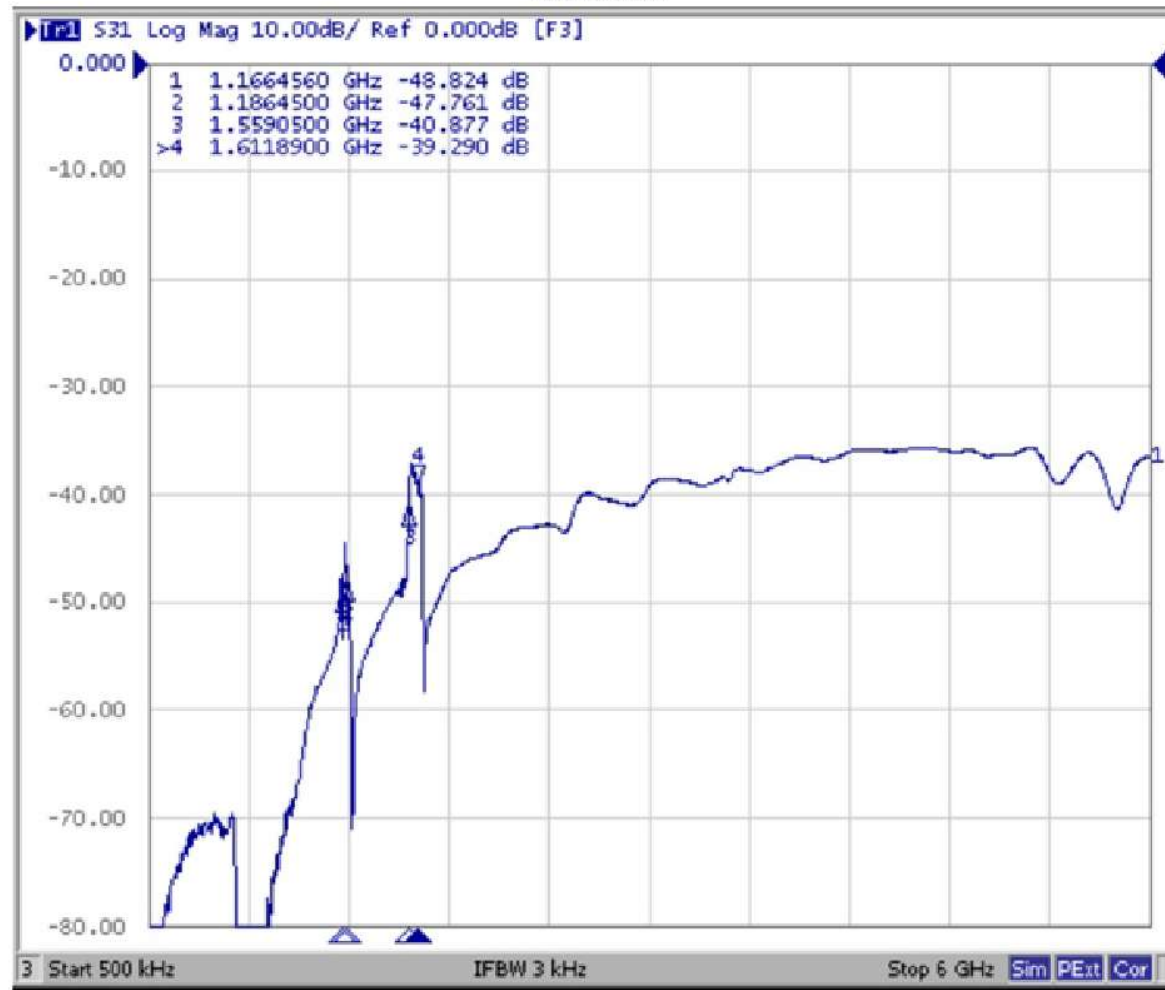
### L1 Group Delay



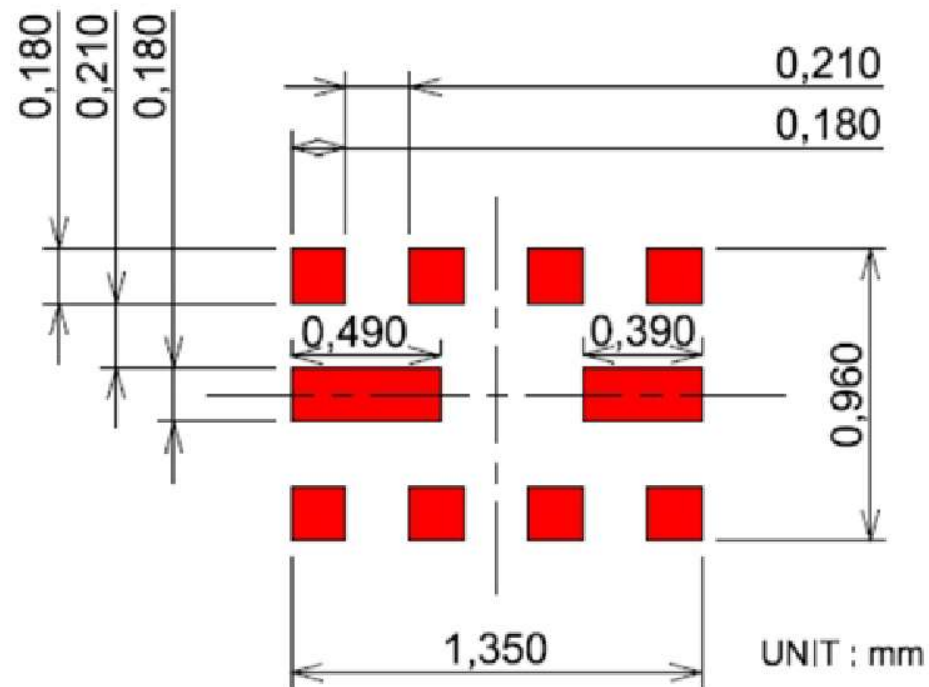
### L1 Reflective Characteristic



## Isolation



## F. PCB FOOTPRINT:

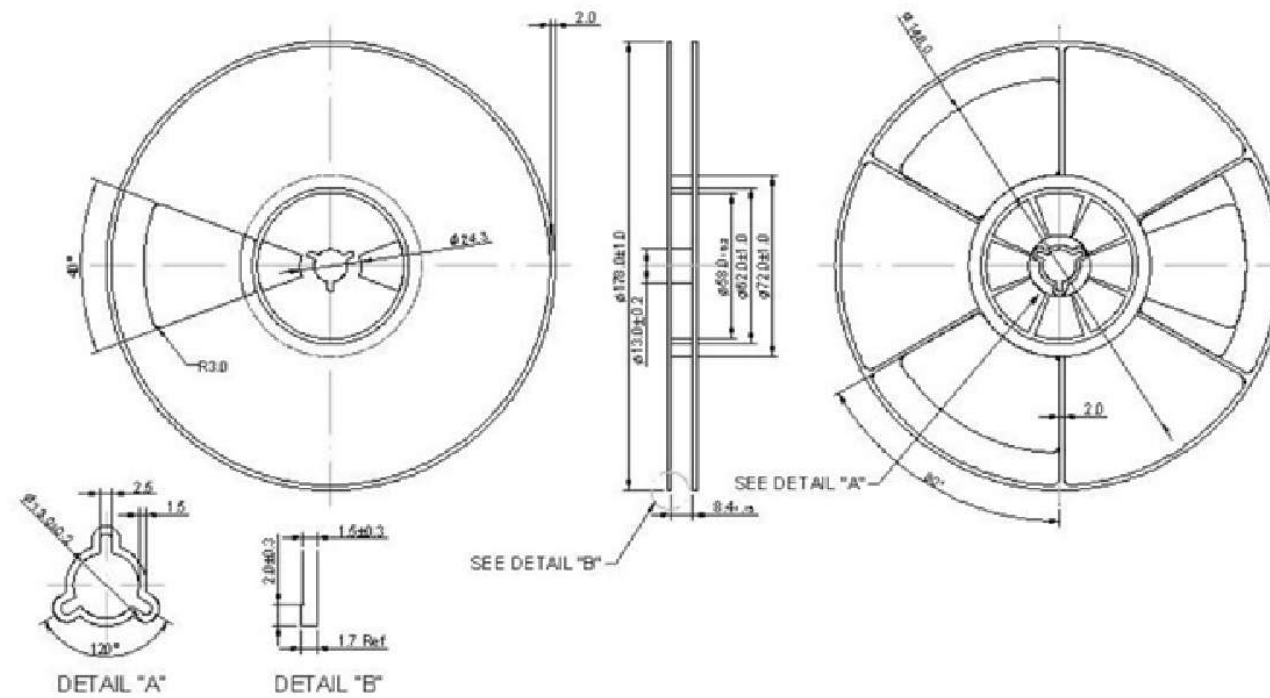




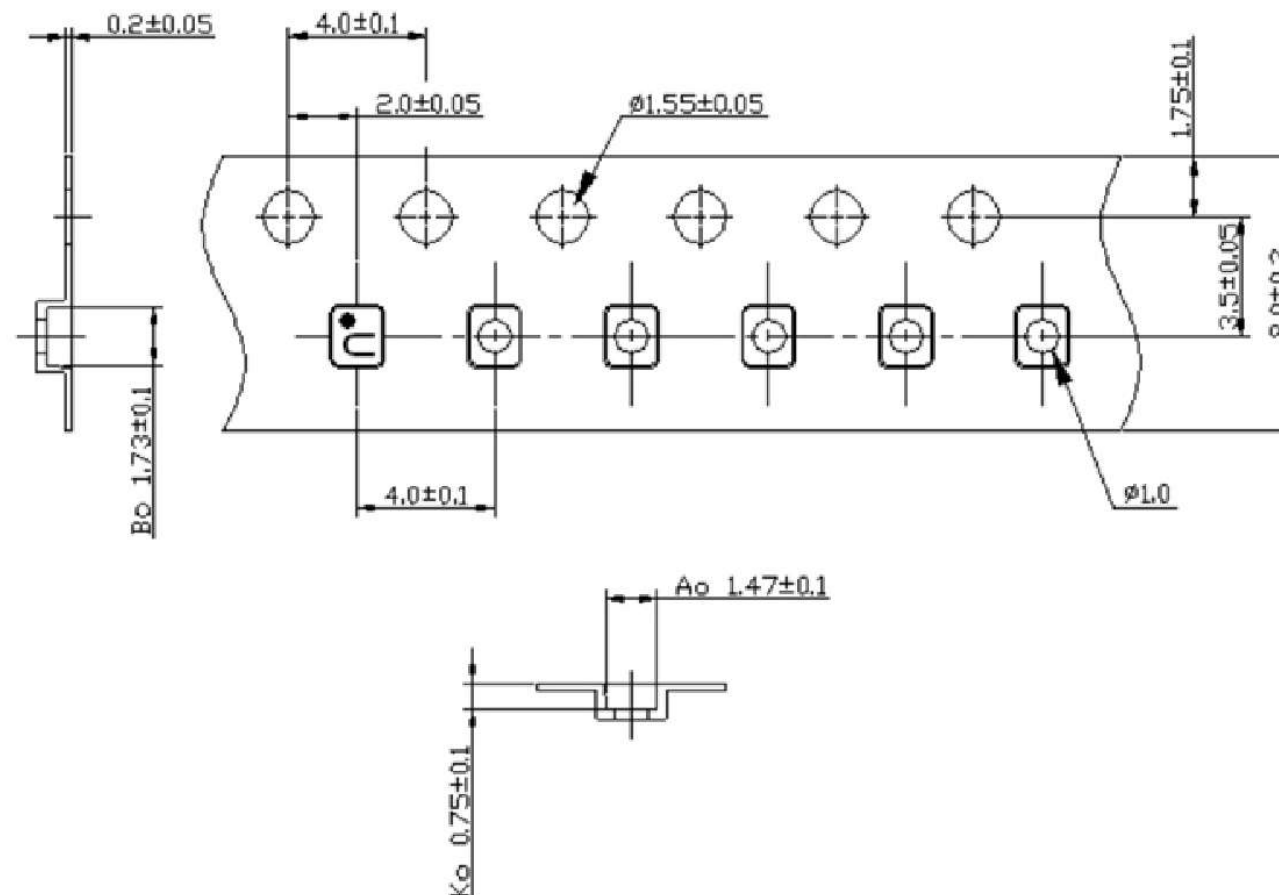
## G. PACKING:

### 1. REEL DIMENSION

(Please refer to FR-75D10 for packing quantity)



### 2. TAPE DIMENSION



## H. RECOMMENDED REFLOW PROFILE :

1. Preheating shall be fixed at  $150\sim 180^{\circ}\text{C}$  for  $60\sim 90$  seconds.
2. Ascending time to preheating temperature  $150^{\circ}\text{C}$  shall be 30 seconds min.
3. Heating shall be fixed at  $220^{\circ}\text{C}$  for  $50\sim 80$  seconds and at  $260^{\circ}\text{C} +0/-5^{\circ}\text{C}$  peak ( $20\sim 40$ sec).
4. Time: 2 times.

